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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/781,994

02/19/2004

Mark Trabbold

D0932-00426

5329

8933 7590 10/02/2007

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EXAMINER

CHRISS, JENNIFER A

ART UNIT

PAPER NUMBER

1771

MAIL DATE

DELIVERY MODE

10/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/781,994	Applicant(s) TRABBOLD ET AL.	
	Examiner Jennifer A. Chriss	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 12-16, 18-20 and 24-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-16, 18-20 and 24-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendments and Remarks

1. The Applicant's Remarks, filed February 5, 2007, have been entered and have been carefully considered. Claims 5 – 8, 15, 24 and 25 are amended, claims 22 and 23 are cancelled and claims 1 – 8, 12 – 16, 18 – 20 and 24 – 31 are pending. In view of Applicant's amendments to claims 5 – 8, 22 and 23, the Examiner withdraws the claim objections and 35 USC 112, end paragraph rejections as detailed in the Office Action dated November 30, 2006. In view of Applicant's arguments that the rejections over Kajander in view of Tutin and Kajander in view of Jaffee are improper because there has not been a showing of motivation to modifying the high density product of Kajander to the substantially lower density range as claimed, the Examiner withdraws the rejections as detailed in the Office Action dated November 30, 2006. Upon consideration of a reference cited in the IDS filed on July 12, 2006, the Examiner has applied a new rejection which is detailed below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 31 requires that the plastic binder comprises 20 – 100% by weight of plastic bonding fiber while the claim from which it depends requires that both binding fibers and powder binder are present. How can both powder and binder fiber be present and the binder fiber constitute 100% of the plastic binder? For purposes of examination at this time, the Examiner will assume that the Applicant requires 20 to less than 100% plastic-containing bonding fiber. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. Claims 1 – 6, 12 – 13, 18 – 20 and 24 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeng et al. (WO 01/31131 A1) in view of Finley (US 1,667,201).

Zeng et al. is directed to a fibrous acoustical insulation product (Title) useful in sound screens and other interior products, appliances, HVAC equipment, vehicles and industrial applications (page 1, Background of the Invention).

As to claim 1, Zeng et al. teach an insulation product having a facing made of a film, foil or open web such as a scrim (page 5, Detailed Description). The insulation product comprises primary fibers and multi-component fibers (page 5, Detailed Description), wherein the primary fibers are wool glass fibers and the multi-component fibers are used as a binder (page 6, Detailed Description). The multi-component fibers

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are made of blends of polyester, polypropylene, polysulfide, polyolefin and polyethylene and other fibers (page 7, Detailed Description); the disclosure specifically discusses that the urea-formaldehyde binder systems of the prior art are undesirable (page 7, Detailed Description). The Examiner equates the primary fibers to Applicant's "fiber component" and the multi-component fibers to Applicant's "non-liquid substantially formaldehyde-free binder". The Examiner submits that, upon assembly, at least some of the binder component would help adhere the facing to the fiber component. The Examples as shown in Table 1 on page 12 show a insulation product having a density range from 1 – 3 pcf or 1 – 3 pounds per cubic foot; the Examiner submits that this significantly overlaps with Applicant's claimed density range. In Examples, a thickness of 1 inch is discussed (pages 10 – 12); the Examiner submits that this significantly overlaps with Applicant's open-ended range. The insulation product may or may not be molded (page 5, Detailed Description); the Examiner submits that a non-molded fibrous product would have some level of flexibility as required by Applicant.

As to claim 2, Zeng et al. do not discuss the addition of any other binders besides the multi-component fibers (page 7, Detailed Description); the Examiner submits this meets Applicant's "substantially only binder".

As to claims 3 – 6, Zeng et al. teach the use of wool glass fibers as the primary fibers having a diameter range from 3 – 30 microns (page 6, Detailed Description). Zeng et al. claims an embodiment where the primary fibers have a diameter range from 3 – 15 microns and 5 – 9 microns (claims 6 – 7); the Examiner submits that these ranges significantly overlap Applicant's claimed ranges.

As to claim 12, Zeng et al., as discussed above, teaches thermoplastic multi-component fibers as the binder fibers. As shown in the Figure, the fibers are uniformly blended with the primary fibers.

As to claim 13, Zeng et al. teach that the multi-component binder fibers can be bi-component (page 7, Detailed Description).

As to claim 18, the Examples as shown in Table 1 on page 12 show an insulation product having a density range from 1 – 3 pcf or 1 – 3 pounds per cubic foot (16.- 48 kilograms per cubic meter); the Examiner submits that this significantly overlaps with Applicant's claimed density range.

As to claims 26 - 28, Zeng et al. teach that the binder fibers can comprise a binder component having a softening point lower than the softening point of the principal polymer component (pages 6 – 7, Detailed Description). As shown in the Figure, sheath-core bi-component fibers can be used as the binder fibers.

Zeng et al. teach that the facing material can be any suitable material such as a film, foil or open web scrim (page 5, Detailed Description). Zeng et al. fail to teach specific details of the facing, specifically that the facing contains a non-woven randomly oriented inorganic, natural or synthetic fibers with a water resistant additive as required by claim 1, that the water resistant additive is made of an epoxy form, acrylic or asphalt as required by claim 24 and that the facing layer is treated with an anti-microbial agent as required by claim 25.

Finley is directed to a weatherproof and decay-proof material (Title) suitable for a protective covering on subsurface structures (page 1, lines 5 – 30). Finley teaches that the protective covering, or Applicant's "facing", is made from a felt or woven fabric base which is saturated with a bituminous composition (page 1, lines 1 – 10) which contains asphalt (page 2, lines 80 – 95). Finley teaches that the coating composition also contains a preservative or antiseptic material in order to avoid rotting or decay of the material in moist locations or when subjected to molds, bacteria and enzymes (page 2, lines 95 – 115). Finley teaches that the preservative or antiseptic material also imparts a preservative action to the whole composite to avoid any odor forming after prolonged use (page 2, lines 110- 115). Finley teaches that the felt can be comprised of cotton rag stock and about 10% wool rag stock (page 2, lines 120 – 130). Finley also teaches the use of asbestos paper instead of a felt material (page 4, lines 70 – 80). The Examiner equates the felt and paper to Applicant's "non-woven of randomly oriented fibers" and the use of cotton and wool to Applicant's "natural fibers" or asbestos to Applicant's "inorganic fibers".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the bitumen coated felt fabric of Finley as the facing material in the invention of Zeng et al. motivated by the desire to create an insulation material having a suitable facing layer which is water-proof.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the protective covering having a preservative or antiseptic material incorporated therein of Finley as the facing material in the invention of Zeng et

al. motivated by the desire to create an insulation material having a suitable facing layer which is highly resistant to molds, bacteria and enzymes and avoids any odor after prolonged use.

As to claims 19 and 20, Zeng et al. in view of Finley teach the claimed invention above but fail to teach that the liner has a gram weight of 50 – 350 gm per meter squared and specifically between 65 – 310 gm per meter squared. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize gram weight of the liner since it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The burden is upon the Applicant to demonstrate that the claimed ranges of gram weight of the duct liner is critical and has unexpected results. In the present invention, one would have been motivated to optimize the gram weight to 50 – 350 gm per meter squared or specifically between 65 – 310 gram per meter squared motivated by the desire to create an insulating material having an appropriate weight, flexibility and desired insulating properties.

7. Claims 7 - 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeng et al. (WO 01/31131 A1) in view of Finley (US 1,667,201) as applied above and further in view of Dotzauer et al. (US 5,145,625).

Zeng et al. in view of Finley teach the claimed invention above but fail to teach any specifics about the length of the mineral fibers, specifically that the mineral fibers range in length from 1 – 20 cm as required by claim 7 and range in length from 2.5 – 12.5 cm as required by claim 8.

Dotzauer et al. teach a shaped panel comprising a binder and mineral fibers. The mineral fibers preferably range in length from 0.5 – 5 cm which make them suitable for use in acoustic boards among other applications (column 3, lines 30 – 45). The Examiner submits that the taught length range substantially overlaps with Applicant's claimed range.

It would have been obvious to one of ordinary skill in the art to create the acoustical panel of Zeng et al. in view of Finley with 0.5 – 5 cm length mineral fibers as suggested by Dotzauer et al. motivated by the desire to use a suitable length mineral fiber to create an acoustical panel.

8. Claims 14, 16 and 30 - 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeng et al. (WO 01/31131 A1) in view of Finley (US 1,667,201) as applied above and further in view of Christie et al. (US 2003/0060113).

Zeng et al. in view of Finley teach the claimed invention above but fail to teach that the binder fibers can comprise monocomponent polymeric fibers as required by claim 14. Additionally, Zeng et al. in view of Finley fail to teach that the binder can comprise thermoplastic or thermosetting powder binder as required by claim 16. Zeng et al. in view of Finley fail to teach that the binder can comprise a mixture of plastic

containing bonding fibers and one substantially formaldehyde-free powder binder as required by claim 30 and that the blend constitutes 20 – less than 100% by weight of plastic-containing binder fibers as required by claim 31.

Christie et al. teach a thermoformable acoustical panel comprising a batt of mineral fibers and multi-component or monocomponent polymer fibers, wherein the polymer fibers are bound to the mineral fibers by application of heat (Abstract). Christie et al. teach the use of multi-component binder fibers (page 2, [0024]) but also teach the use of monocomponent polymer fibers and particulate material as binders as well (page 4, [0045 – 0046]). Christie et al. note that the monocomponent fibers can be applied as binder to produce a self-supporting, flame resistant, highly acoustical and thermoformable panel (page 4, [0045]) and the particulate binder can be used to form a highly acoustical soft-fiber panel that can be post compressed or surface scrimmed for optimal rigidity and self-support (page 4, [0046]). Christie et al. also teach an embodiment where the binder comprises dispersible particulate polymer binder and polymer fiber (page 5, [0055]).

Because Zeng et al. and Christie et al. both teach acoustic insulation panels, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate monocomponent binder fibers instead of multi-component binder fibers as suggested by Christie et al. when creating the acoustical panel of Zeng et al. in view of Finely motivated by the desire to use functionally equivalent binder material suitable for binding an acoustical panel and to achieve the predictable result of creating an acoustic insulation panel.

Because Zeng et al. and Christie et al. both teach acoustic insulation panels, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate powder binders instead of multi-component binder fibers as suggested by Christie et al. when creating the acoustical panel of Zeng et al. in view of Finley motivated by the desire to use functionally equivalent binder material suitable for binding an acoustical panel and to achieve the predictable result of creating an acoustic insulation panel.

Because Zeng et al. and Christie et al. both teach acoustic insulation panels, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a combination of polymeric fibers and powder binder instead of just multi-component binder fibers as suggested by Christie et al. in view of Finley when creating the acoustical panel of Zeng et al. in view of Finley motivated by the desire to use functionally equivalent binder materials suitable for binding an acoustical panel and to achieve the predictable result of creating an acoustic insulation panel.

As to claim 31, Zeng et al. in view of Finley and Christie et al. teach the claimed invention above but fail to teach that the plastic-containing bonding fiber comprises about 20 – less than 100% of the non-liquid substantially formaldehyde free binder. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount of plastic-containing bonding fiber since it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). The burden is upon the

Applicant to demonstrate that the claimed amount of bonding fiber is critical and has unexpected results. In the present invention, one would have been motivated to optimize the percentage of bonding fiber motivated by the desire create an acoustical panel having the desired rigidity and other mechanical properties.

9. Claims 15 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeng et al. (WO 01/31131 A1) in view of Finley (US 1,667,201) as applied above and further in view of Hucks et al. (US 4,055,611).

Zeng et al. in view of Finley teach the claimed invention above but fail to teach that the bonding fibers can comprise plastic coated mineral fibers (sheath-core) as required by claims 15 and 29.

Hucks et al. teach plastic coated glass fibers which are suitable for use as a base material for glass fiber mats. The mats are very dimensionally stable and have an abrasion resistant surface (column 2, lines 10 – 25). Hucks et al. teach the use of thermoplastic and other non-thermoplastic materials used for the coating (column 3, lines 60 – 69 and column 4, lines 1 – 40).

It would have been obvious to one of ordinary skill in the art to use thermoplastic-coated mineral fibers as suggested by Hucks et al. in the glass or mineral fiber based insulation material of Zeng et al. in view of Finley motivated by the desire to create a composite material having high dimensional stability and an abrasion resistant layer making it highly suitable for acoustic insulation.

Response to Arguments

10. Applicant's arguments with respect to claims 1 – 8, 12 – 16, 18 – 20 and 24 – 31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Chriss whose telephone number is 571-272-7783. The examiner can normally be reached on Monday - Friday 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571 - 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer A Chriss/
Examiner, Art Unit 1771
October 1, 2007

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